

Comparative Advantages of Small-Scale Forestry Among Emerging Forest Tenures

John C. Bliss · Erin Clover Kelly

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Abstract Forestland tenure institutions and patterns are in a period of rapid change in the USA. Historically dominant forestland tenures are disappearing, and new tenures are emerging. Traditional, vertically integrated forest products firms have shed their forestland holdings which have been picked up by Timber Investment Management Organizations (TIMOs) and Real Estate Investment Trusts (REITs). Increasing numbers of private individuals and families are purchasing small rural tracts and some communities are developing innovative means to gain control over nearby forestlands in order to protect these lands from commercial real estate development. Within this context of rapid ownership change, small-scale forest owners including families and communities find themselves at a competitive disadvantage, relative to large corporate owners, in wood commodity markets. This paper considers how small-scale forest tenures, relative to large corporate tenures, may be advantageous to society with regard to selected ecological, social, and economic factors. While the paper primarily draws upon illustrations from the US Pacific Northwest, its themes are global in nature.

Keywords Timber investment management organizations · Investment trusts · Family forest owners · Place attachment · Certified wood

Small-Scale Forestry and Large-Scale Competitors

In today's global, intensely competitive free market, smallness of enterprise is not generally viewed as an asset. Particularly in commodity markets, economies of scale in ownership, management, production, transportation and marketing all favour bigness. Evidence for the truth of this observation is abundant in the profound

J. C. Bliss (✉) · E. C. Kelly
College of Forestry, Oregon State University, Corvallis, OR 97331, USA
e-mail: john.bliss@oregonstate.edu

consolidation experienced among corporations in the forestry sector around the globe over the past decade. Increasingly, the forestry sector has organized itself to capitalize upon economies of scale, squeezing inefficiencies out of every link in the commodity chain from the seedling to the (small-diameter) log, to the manufactured product and to its final application.

Accompanying this profound consolidation trend has been the transfer of timberlands from traditional forest products companies to institutional investors. Whereas traditional, vertically integrated forest products companies owned both timberlands and wood processing facilities, the newly dominant institutional investors own only timberland. Typically, timberland represents just one portion of a company's investment portfolio. Because its values do not correlate with assets like stocks and bonds, timberland is seen as an effective way to diversify investors' portfolios. Institutional investors—including pension funds, insurance companies, endowments, and small groups of wealthy individuals—generally utilize Timber Investment Management Organizations (TIMOs) to manage their properties. Another emergent class of institutional investors consists of Real Estate Investment Trusts (REITs), which are, like TIMOs, tax-advantaged entities. Vertically integrated companies have been selling off their timberlands at a rapid rate since at least the mid 1990s, and institutional investors are the primary purchasers.

The rate at which the forest ownership pattern of the US has changed has been so rapid that accurate, up-to-date statistics on ownership are unavailable. As of 2002, non-industrial private owners held over 151 M ha, or 49% of forestland in the nation (Smith et al. 2004), with about 10.3 M family forest owners holding 40% of the forested area (Butler and Leatherberry 2004). Industrial owners held an additional 9%, and public forestland accounted for the remainder (Smith et al. 2004).

In 1996, around 95% of the industrial forestland in the country was owned by traditional, vertically integrated forest products firms. By 2006, at least one-half of that acreage was estimated to be under TIMO or REIT ownership (Campbell Group 2006). In 1990, only two or three TIMOs existed in the US; by 2006 there were 24 TIMOs managing timberlands valued at \$15.7 billion (Braxton Little 2006).

Bias against smallness in forestry in the US predates the recent period of corporate consolidation. For decades the prevailing view of non-industrial private forests was summed up as 'The Small Woodland Problem' (e.g. McMahon 1964, Fedkiw 1983). From the professional forester's perspective, small-scale forests do not fit smoothly into the commodity chain: the ownerships are too small to be dealt with individually, and their owners stubbornly refuse to become miniaturized versions of their industrial big brothers.

Small-scale forest owners voice their share of complaints about their role in the forestry sector as well. Big corporations control the market, determining what will be purchased and at what price. Government regulations designed with large corporate ownerships in mind unfairly penalize small ownerships, further eroding their ability to compete. Society at large has no appreciation of the values and services small-scale forests provide, and is, in many situations, unwilling to pay for them.

These challenges and disadvantages notwithstanding, it might be fruitful to consider what advantages there might be to smallness in the forestry sector; in terms of advantages to the forest owners themselves, to local communities, and to society

more widely. It is in this sense, not the technical economic sense, that the term ‘comparative advantage’ is used here. It is argued that society benefits from several attributes of small-scale forestry, and that, with policy innovation and market development, owners of small-scale forests may one day benefit as well.

The propositions presented in this essay should be considered as testable hypotheses, not statistically defensible claims. They arise from the extensive research literature on family forest owners in the USA, but are not directly derived from a particular research project. The propositions vary from ideas well-grounded in the literature to somewhat speculative notions. While they describe attributes which many small-scale forests and their owners display, there may be few ownerships or owners which possess all of the attributes. It is hoped that describing the ideal or model case provides a point of departure for thinking about potential futures for this ownership class. Many of our observations of TIMOS and REITs are necessarily preliminary, tentative and speculative, given the dearth of solid research on these developments. Research to understand better the practices and implications of this ownership category is still in its infancy.

Comparative Advantages of Small-Scale Forestry

Human Attributes

Diversity

Many of the advantages of small-scale forestry stem from attributes of the forest owners themselves. Family forests in particular reflect the values, objectives and capabilities of their individual owners. Public forest management is based on political processes and public input; corporate forest management must be responsive to share holders, but family forests are managed by individuals, families, or small groups of like-minded citizens. The well-documented diversity of objectives of small-scale forest owners (e.g. as reported by Birch 1996 and Butler and Leatherberry 2004) has frustrated generations of professional foresters seeking uniformity of management across the landscape. Nowadays, that diversity of objectives can be seen as an advantage to society, especially when considered from a landscape perspective. The diverse ecological outcomes arising from family forest owners’ objectives provide a degree of balance to the monolithic uniformity of corporate forest ownerships (Stanfield et al. 2003). This is particularly true in the era of institutional investors; as rotation lengths become shorter on TIMO and REIT lands and mills consolidate, there are few incentives for corporate ownerships to diversify their management. Institutional investors who manage large landscapes may be less likely than small-scale owners to seek niche markets or alternative management practices.

Human Capital

Small-scale forest owners are endowed with high and rising levels of human capital. Historically, family forest owners have been repositories of local, indigenous

knowledge about their forestland. Many have resided on or near their forestland, learning from long-standing familiarity and experience about local growing conditions, soil capabilities and weather patterns. The encyclopaedic knowledge of some owners about their own specific piece of ground can be astounding (as documented by Bliss 1992 and Fischer and Bliss 2006). Owners know local and regional markets, as well as the dynamics of local society. Moreover, educational attainment of family forest owners in the USA has steadily grown, and with it, household income (US Census Bureau 2000). Many of today's owners are highly educated, many having retired from successful careers in education, business, medicine, law, and other professions. They bring to their forest management high levels of analytical thinking, intellectual curiosity, and expertise in experimentation, management and communication.

Place Attachment

Many owners, long-standing and new alike, are motivated by a strong sense of attachment to their particular place—a farm, a watershed, a community—that has deep and special meaning to them. They do not practice forestry just anywhere, but rather invest their time in the places where they choose to live. Their management decisions reflect a desire and intention to steward a special place. On the other hand, large-scale timber corporations are generally headquartered in major urban centres. While their forest managers may be local, they are unlikely to have the final say in management decisions.

The timber industry has grown increasingly global in its outlook, particularly with the rise of institutional investors of forestland. Unlike traditional forest sector industrial owners, institutional investors do not own mills. They sell the wood they grow on the open market, rather than supporting a local, company-owned mill. These new arrangements have contributed to the closure of many local mills that depend on nearby wood supplies. In contrast, small-scale forest owners typically supply local mills with which they have working relations.

Value Orientation

Small-scale forest owners commonly describe their management decisions as value-driven, that is, they are motivated by an inclination to do what they believe to be right (Bliss and Martin 1989). While some may indeed accelerate or expand timber harvesting to cover debt, debt is not the main management driver most of the time. Their management decisions reflect the diversity of their objectives; some are made purely for financial reasons, others reflect the desire to protect and restore their land, experiment with alternative practices or expand recreational opportunities. For many, forest management itself is recreational. This is a stark contrast to an institutional investor, whose management responsibility is to a distant body of shareholders and a bureaucratic corporate structure. The landscapes of most institutional investors are unlikely to reflect many values that are not required by

law (e.g. the *Oregon Forest Practices Act*) or driven by economics, although some firms might exceed environmental protection requirements in order to demonstrate corporate social responsibility and enhance a ‘green’ reputation.

Social Acceptability

The US general public is largely unaware of the existence of small-scale forestry, and many family forest owners perceive themselves to be misunderstood and unappreciated. Yet, indications are that, relative to corporate forestry, small-scale forestry is viewed favourably by the American public (Bliss et al. 1994). The small-scale of forest operations on family forestlands is preferred, and there is somewhat of a ‘family farm halo’ around family forests. For example, survey research suggests that Americans are more tolerant of timber harvesting on family lands than on corporate lands. They believe that families are better stewards of the land, and more sensitive to local concerns and special places (Bliss 2000).

Most institutional investors have begun to divest some landholdings, seeking, where possible, to sell or develop land on the real estate market. As an example, Potlatch Corporation currently has 18–20% of its timberland identified as ‘non-strategic’ for timber production. This amounts to approximately 100,000 ha that will be available for real estate development over the next few years (Campbell Group 2006). Some rural Montana communities are expressing concern at the rapidity with which institutional investors are transforming former timberlands to upscale residential neighbourhoods with little sensitivity to local concerns regarding fire, infrastructure, services or orderly growth (Jamison 2007).

Managerial Attributes

Geographic Scale

The unique managerial context of small-scale forestry further distinguishes it from industrial, corporate or public forestry. Because the properties are smaller, the scale of management practices is correspondingly smaller. In the US Pacific Northwest, for example, family forest owners utilize broadcast treatments, such as clear cutting and aerial herbicide application, with less frequency than corporate owners. This bias against large-scale broadcast treatments reflects both the limited acreages of small-scale ownerships, and managerial preferences of the owners. Management practices are sized to fit family resources including labour, equipment, time and money (Fischer and Bliss 2006). The size of management units also reflects the diversity of objectives being pursued on relatively small tracts; subjecting a large proportion of an ownership to one particular treatment may preclude implementing other treatments. The result is that within-ownership diversity tends to be higher than that of corporate or public ownerships.

Temporal Scale

Large-scale industrial owners and institutional owners need to deliver quarterly earnings to shareholders and must therefore focus management on the short term. This focus on near-term profitability has driven institutional investors, in particular, to seek ever-shorter rotations. In Western Oregon, rotations of fewer than 40 years are now the norm on these ownerships. In addition, institutional investors may have management horizons even shorter than traditional corporate owners; closed-end funds hold timberlands for a fixed period, usually 10–15 years (Wilent 2004). On the other hand, most small-scale owners aspire to manage for the long term. Many family forest owners undertake restoration, reforestation and afforestation activities with the clear understanding that they personally will not be around when the fruits of their labours mature. Driven by a desire to restore degraded land or to create a legacy, they invest in the future. While the ideal of multi-generational planning horizons may seldom be realized, it never-the-less influences the way in which these owners think about their forest resources and their choice of management tools.

In the Douglas fir range of the US Pacific Northwest, this long-term view, together with aesthetic preferences and historical market preferences, has led family forest owners to manage on long rotations relative to industry standards. High quality, large diameter Douglas fir sawlogs have been the principal product of these owners for decades. In recent years, as corporate owners have reduced rotation lengths, sawmill capacity has accordingly shifted to smaller logs. Family owners are finding it increasingly difficult to manage on 60–80 years or even longer rotations.

Flexibility

Due to their relatively flat organizational structure, generally without shareholders and boards of trustees to please, small-scale forest enterprises enjoy a degree of flexibility not shared by public or other private ownerships. Family forest owners may be uniquely free to experiment, innovate, revise plans, and respond quickly to changing markets, environmental conditions or family circumstances. The joy and intellectual stimulation of learning from experimentation has been cited by many forest owners as an important motivation for owning and managing forest properties. While small-scale owners no doubt include the full range of innovation adoption types, from ‘laggard’ to ‘innovator’, the challenges and rewards of small-scale forest management seem to attract a disproportionate share of ‘innovators’ and ‘early adopters’.

Management Intensity

Although the term ‘intensive’ is typically associated with the management style of large-scale industrial forest owners, one could argue that the forestry practiced by small-scale owners is in fact much more intensive. Whereas industrial owners tend to apply a single, standard management prescription broadly across their ownerships

in order to homogenize their holdings and maximize management efficiency, small-scale owners tend to customize treatment of very small stands so as to accentuate and expand the diversity of conditions present.

Location of Small-Scale Ownerships

In the US Pacific Northwest, and indeed throughout much of North America, European settlement patterns gave rise to a concentration of small, private farm and forestland ownerships at low elevations, on fertile soils, and in the riparian zones of major river corridors (MacCleery 1993). These areas continue to be where large numbers of people live, work, travel and recreate. Thus, they are increasingly valued by urbanites for the ecological services, recreational opportunities and open green space they provide. As institutional owners divest their landholdings nearest to urban areas, opportunities may arise for small-scale foresters who have the capital to invest in land.

Emerging Markets

Markets for Large Logs

Small-scale forests produce many products and services which are either enjoying increased demand or have the potential of growing markets. In order to compete in fiercely competitive global commodity markets, corporate owners have relentlessly cut costs and inefficiencies throughout the commodity chain. The corporate model has been to establish genetically identical, single species plantations, ‘intensively’ cultivated in order to produce small logs on ever-shorter rotations. Mills have followed suit, gearing operations to mill ever-smaller diameter logs. Wood markets no longer pay the premium they once paid for high quality, large logs, and milling capacity for such logs has declined. This has caused a dilemma for small-scale owners who have historically grown large trees over long rotations. While many owners will likely adjust their management in order to produce for the commodity market, others may opt out of competing with large corporate growers and instead hope that new specialty markets will emerge. Manufacturers seeking larger diameter logs, or logs with the wood characteristics of older trees, must now look to either public or private small-scale owners to supply their needs. While the market for large logs is not well-developed in the Pacific Northwest, there appears to be much potential. Cabin logs, timbers, and posts and poles for contemporary wood construction constitute one potential market; specialty hardwoods, which have little place in the monocultural corporate model, constitute another.

Markets for Certified Green Wood

The development of markets for certified wood products is highly patchy around the world. Whereas such markets are well developed in Europe, they are still in their

infancy in the US Pacific Northwest. It is unclear what certifying scheme, if any, is in ascendance in this region. One interesting proposal is the development of ‘Brand Oregon’, a scheme, which would certify wood produced in compliance with the state of Oregon’s *Forest Practices Act*, one of the most comprehensive forestry Acts in the USA. If certification by one system or another begins to offer substantial market advantages, small-scale owners could be beneficiaries.

Ecological Services Markets

Owing to their location near metropolitan areas and along riparian corridors, small-scale forests may, at some time in the future, benefit from developing markets for ecological services such as carbon sequestration and habitat mitigation banking. Many owners’ existing management styles are compatible with provision of ecological services, and would implement additional practices given sufficient market or other incentives.

Markets for Recreation Services

The close proximity of many small-scale forest ownerships to metropolitan areas renders them attractive to urban recreationists. Historically, family forest owners in some regions of the US have supplemented family income through hunting leases. Farmstay and bed-and-breakfast operations are growing in popularity. Perhaps the most well-developed forest-based ecotourism activities on small-scale forest ownerships are fall colour and maple sugar bush tours in the Northeast, but tree-planting, salmon-spotting and spring bird monitoring are emerging elsewhere as potential ecotourism markets (Hayes 2007).

Challenges to Realizing Small-Scale Forestry Advantages

Throughout this paper an idealized case has been described in order to draw attention to the many positive attributes of small-scale forests. Few, if any, forest ownerships display all of these attributes; indeed, most face daunting challenges to their continuing survival.

Firstly, the attributes of small-scale forestry notwithstanding, scale is a factor in global markets, particularly in commodity markets, where conditions conspire to reward expansion. Although ‘How small is too small?’ may be debated, there are diseconomies to smallness. Large ownerships have the capital and the land base to justify investments in technology and personnel. Additionally, many properties at the urban fringe are parcelizing as real estate values surpass their value as timberland. This may result in these forestlands being taken out of production for many of the products and services otherwise possible (Sampson and DeCoster 2000, Egan and Luloff 2000), which could have serious consequences for nearby small-scale forest owners who wish to continue timber management. Neighbours may

oppose harvesting operations, invasive species, disease, and wildfire may become a growing threat, and the local infrastructure for forest management, including mills and forestry knowledge, could deteriorate further. Secondly, as previously mentioned, markets for certified wood products, ecological services, and recreation are still immature in the USA, including the Pacific Northwest. Until these markets are more fully developed, they are unlikely to attract large numbers of small-scale forestland owners. Innovators and early adopters are liable to find themselves on the 'bleeding edge' of these market innovations.

Finally, the above description has been of an idealized forest owner: the innovator, the land steward, and the risk taker. This ideal type has been based on characteristics of owners that actually exist, but may not represent an average or typical owner. Within the ranks of small-scale forest owners are those who display the common human traits of greed, short-sightedness, apathy and ignorance. Poverty and limited education will limit the capacity of others to access emerging opportunities. The 'rugged individualism' of some owners and a disinclination to engage with urban consumers, recreationists and conservation groups might preclude their participating in markets and schemes which threaten their sense of independence.

It is easy to despair about the difficulties of 'making it' as a small-scale forest owner in a global market. The challenges seem overwhelming and the solutions too complex, too long in the making, or too unlikely to materialize. Greater imagination is required to find reasons for optimism in the sector. It is hoped the propositions presented provide fodder for further discussion about the prospects for small-scale forestry, and help move the discussion from the realm of overwhelming challenges to the realm of possibilities.

References

- Birch T (1996) Private forestland owners of the Western United States, 1994, USDA Forest Service NE Forest Experiment Station Resource Bulletin NE-137. Radnor, PA
- Bliss JC (1992) Evidence of ethnicity: management styles of forest owners in Wisconsin. *J For Conserv Hist* 36(2):63–72
- Bliss JC (2000) Public perceptions of clearcutting. *J For* 98(12):4–9
- Bliss JC, Martin AJ (1989) Identifying NIPF management motivations with qualitative methods. *For Sci* 35(2):601–622
- Bliss JC, Nepal SK, Brooks RT Jr, Larsen MD (1994) Forestry community or granfalloon? *J For* 92(9): 6–10
- Bliss JC, Nepal SK, Brooks RT Jr, Larsen MD (1997) In the mainstream: environmental attitudes of mid-south NIPF owners. *South J Appl For* 21(1):37–42
- Braxton Little J (2006) Timberlands in turmoil. *Am For Winter*, 2006
- Butler BJ, Leatherberry EC (2004) America's family forest owners. *J For* 102(7):4–9
- Campbell Group (2006) Timber trends Newsletter, December 2006. Available Online at: http://www.campbellgroup.com/timber_research/
- Egan AF, Luloff AE (2000) The exurbanization of America's forests: research in rural social science. *J For* 98(3):26–30
- Fedkiw J (1983) Background paper on non-industrial private forest lands, their management, and related public and private assistance. USDA Forest Service Office of Budget Program Analysis, Office of the Secretary, WA

- Fisher AP, Bliss JC (2006) Mental and biophysical terrains of biodiversity: Conservation of oak woodland on family forests. *Soc Nat Resour* 19(7):625–645
- Hayes P (2007) Hyla Woods News. Electronic Newsletter, March, 2007. Oregon, Portland
- Jamison M (2007) Timber in transition: booming values shift Plum Creek from logging to real estate. The Missoulian Newspaper. Available Online at: <http://www.missoulian.com>
- MacCleery DW (1993) American forests: a history of resiliency and recovery. USDA Forest Service FS-540
- McMahon R (1964) Private nonindustrial ownership of forest land. Yale University School of Forestry Bulletin No. 68. Yale University, New Haven
- Sampson N, DeCoster L (2000) Forest fragmentation: implications for sustainable private forests. *J For* 98(3):4–8
- Smith WB, Miles PD, Vissage JS, Pugh SA (2004) Forest resources of the United States, 2002, General Technical Report NC-241. US Department of Agriculture, Forest Service, North Central Research Station, St. Paul
- Stanfield BJ, Bliss JC, Spies TA (2003) Landownership and landscape structure: a spatial analysis of 66 Oregon Coast Range watersheds. *Landsc Ecol* (in press)
- U.S. Census Bureau (2000) United States Census 2000. <http://www.census.gov>
- Wilent S (2004) Investors increase timberland holdings: eight percent of “investable” US forestland held by investment managers. *The Forestry Source* December 2004